26. (New) Crystals according to claim 16, wherein the molar ratio between Zn^{++} and GH is from about 0.5 to 2.0.

27. (New) A process according to claim 1, wherein the pH in step a) is from 6.0 to 6.5.

REMARKS

Applicants note the Examiner's withdrawal of the restriction requirement and the rejoining of claims 1-14 and 19 with claims 15-18 as a single group. Following entry of the above amendments, claims 1-9, 11-18 and 20-27 are pending.

As required by 37 C.F.R. 1.121, a "marked-up" copy of the amended claims and specification is appended to this Amendment.

PRIORITY

In response to the Examiner's request that Applicants file a certified copy of Danish priority application 1687/90, Applicants submit herewith a certified copy of the Danish priority application.

OBJECTION TO IDS

The Examiner asserts that the IDS filed June 9, 2000 (sic, June 12, 2000) fails to comply with the requirements of 37 C.F.R. 1.97 and 1.98 because it contains no legible copies of each cited U.S. and foreign patent and each publication. The Examiner therefore indicated that the IDS has been placed in the file but not considered on the merits.

In response, Applicants note that the IDS filed on June 12, 2000 (copy attached) expressly stated that "Copies of references were filed with USSN 07/961,932 filed January 13, 1993, the benefit of which is claimed under 35 USC 120." (page 1 of IDS, emphasis in original). Thus, pursuant to 37 C.F.R. 1.98 (d) (1), copies of the patents and publications listed in the June 12, 2000 IDS and accompanying PTO 1449 forms did not need to be provided since the patents and publications were cited in a prior application (07/961,932) and this earlier application was properly identified in the June 12th IDS and is relied on for an

earlier filing date under 35 USC 120. Accordingly, Applicants respectfully request that the Examiner consider the references cited in the June 12, 2000 IDS. For the Examiner's convenience, a clean copy of the PTO 1449 forms is attached.

OBJECTIONS TO THE SPECIFICATION

The Examiner objected to the specification because:

1) met-hGH needs to be spelled out on page 1, line 21;
2) on page 10, line 20, Zn (Ac) should be changed to zinc acetate because Ac could mean actinium or allyl chloride;
3) F-7 and F-8 need to be spelled out in the paragraph bridging pages 11 and 12; and
4) On page 13, line 15, 10% should be changed to "10% (v/v) for consistency.

Applicants address each of these objections in turn:

1) It is respectfully submitted that Met-hGH on page 1, line 21 does not need to be spelled out because the symbol "Met" is universally understood by those of skill in the art to indicate methionine and "hGH" is indicated earlier in the specification (page 1, lines 20-21) to mean human growth hormone. Thus, one skilled in the art would readily understand that "Met-hGH" means hGH where the first amino acid is a methionine.
2) in view of the disclosure on page 8, lines 9-10 ("and thereafter zinc acetate solution was added to a final concentration of 0.08 mg $ZnAc_2$, the phrase "ZnAc" would clearly be understood by one of skill in the art to indicate zinc acetate;
3) the recitations F-7 and F-8 are simply designations given to the two preparations of hGH crystals described in the paragraph bridging pages 11-12 of the specification and therefore there is nothing to be spelled out; and
4) page 13 of the specification has been amended to recite 10% (v/v).

Accordingly, in view of the above remarks and the amendment to page 13 of the specification, withdrawal of the objections to the specification is respectfully requested.

REJECTIONS UNDER 35 U.S.C. §112, SECOND PARAGRAPH

Claims 4-10, 12, 13 and 16-21 are rejected under 35 U.S.C. §112, second paragraph, for allegedly being indefinite for

1) failing to spell out "GH" in full the first time it is used (claims 1 and 15);
2) the recitation of "from about 0% to about 30% .." and "known means" (claim 1);
3) what are or are not "GH derivatives"(claim 1);
4) the use of "or" in the Markush group of claim 3;
5) the recitation of broad and narrow ranges within a single claim (claims 2, 7, 12 and 17);
6) the use of "or" in claim 5 as it is unclear which solvent is to be use, ethanol or acetone;
7) being multiply dependent from a multiple dependent claim (claims 8, 13, 18 and 19)
8) the recitations "unspecific precipitation" and "amorphous material" (claim 10)
9) the lack of antecedent basis for the phrase "growth hormone" (claim 13); and
10) the recitation "derivatives" in claims 13 and 15 as it is unclear what derivatives are referred to.

Applicants respectfully traverse these rejections and address each in turn.

1,4,5 and 7-9) these rejections are all believed to be rendered moot by the amendments to the claims presented herein;

2) the phrase "known means" has been deleted from claim 1. As to the recitation of "from about 0% to about 30% .." , Applicants note that this phrase is the same as the language that was considered definite by the Patent Office in the claims of the earlier issued US patent 5, 780, 599 (see claim 1) and that the patent issued from the grandparent application of the present application and has the same specification as the present application;

3 and 10) Applicants note that the phrase "derivative" as used in conjunction with GH or hGH in the present claims was considered definite by the Patent Office when used in the claims of the earlier issued US patent 5, 780, 599 and that the patent issued from the grandparent application of the present application and has the same specification as the present application; and

6) the use of "or" in claim 5 is clear on its face as it indicates that either solvent, ethanol or acetone, can be used.

For the foregoing reasons, Applicants submit that the above arguments and amendments to the claims overcome the rejections under 35 U.S.C. §112, second paragraph, and respectfully request reconsideration and withdrawal of these rejections.

Double Patenting Rejection

Claims 2-9, 11-14 and 16 were rejected under 35 U.S.C. 101 as claiming the same invention as claims 11, 2-8, 10, 12-17 and 19 of US patent 5,780,599.

Applicants respectfully traverse this rejection.

A statutory double patenting rejection is designed to prevent two inventions from issuing on the same invention where "same invention" means identical subject matter. MPEP 804 II A.

Here, this rejection is not appropriate because the above-identified claims of the present application and claims 11, 2-8, 10, 12-17 and 19 of US patent 5,780,599 are clearly not to the same invention.

For example, step (a) of claim 1 of US patent 5,780,599 recites "**divalent** inorganic cations and organic solvents or a mixture of organic solvents" whereas step (a) of pending claim 1 recites "cations of inorganic **or organic nature** and an organic solvent or a mixture of organic solvents". Accordingly, pending claims 2-9 and 11-14 which depend from pending claim 1, and claims 11, 2-8, 10 and 12-17 of US patent 5,780,599 which depend from issued claim 1, are not directed to the same invention.

Similarly, since pending claim 15 is directed to cation crystals and issued claim 18 of US patent 5,780,999 is directed to divalent cation crystals prepared according the process of claim 1, pending claim 16 (which depends from claim 15) and issued claim 19 (which depends from issued claim 18) are not directed to the same invention.

Accordingly, withdrawal of the statutory double patenting rejection under 35 U.S.C. 101 is respectfully requested.

Obviousness-Type Double Patenting Rejection

Claims 1-19 were rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-23 of U.S. Patent No. 5,780,599.

In response, Applicants submit a terminal disclaimer to overcome this rejection and note that the "filing of a terminal disclaimer simply serves the statutory function of removing the rejection of double patenting and raises neither a presumption nor estoppel on the merits of the rejection". Quad Environmental Technologies Corp. v. Union Sanitary District, 20 USPQ 2d 1392 (Fed. Cir. 1991).

In view of the above, it is respectfully submitted that all of the pending claims are in condition for allowance.

Early action to that end is respectfully requested.

The Examiner is hereby invited to contact the undersigned by telephone if there are any questions concerning this amendment or application.

Respectfully submitted,

Date: November 27, 2002

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"Marked-Up" Version Of Amendments To Specification

Please replace the paragraph at page 13, lines 14-15 with the following paragraph

--The crystals were formed as described in Example 1 with the exception that 7.5% (v/v) acetone was added instead of 10% (v/v) .--

"Marked-Up" Version Of Amended Claims

1. (Amended) A process for production of cation crystals of [GH] growth hormone (GH) or of a GH [derivatives] derivative, said process comprising the following steps:

a) adding to a solution of said GH or said GH [derivatives thereof is added] derivative cations of inorganic or organic nature and an organic solvent or a mixture of organic solvents at a pH between 5.0 and 6.8,

b) growing of crystals at a temperature from about 0 to about 30°C, and

c) [isolation of] isolating the cation crystals [by known means] grown in step b).

2. (Amended) A process according to claim 1, wherein the pH in step a) is from 5.8 to 6.5[,preferably from 6.0 to 6.5] .

3. (Amended) A process according to claim 1, wherein the organic solvent is selected from the group consisting of short chained aliphatic alcohols, cyclic alcohols, [or] aromatic alcohols [or] and ketones.

6. (Amended) A process according to [any of claims 1 to 5] claim 1, wherein the organic solvent is added in a concentration of about 0.1 to about 50% v/v.

7. (Amended) A process according to claim 6, wherein the organic solvent is added in a concentration of from 0.1 to 30%[, preferably from 0.1 to 20%, more preferred from 5 to 1% and most preferred from 6 to 12%].

8. (Amended) A process according to [any of the preceding claims 1 to 7] claim 1, wherein the cation is a divalent cation.

11. (Amended) A process according to claim [10] 9, wherein Zn^{++} is added in a concentration from 0.5 to 10 mol Zn^{++}/mol GH.

12. (Amended) A process according to claim 11 wherein the concentration of Zn^{++} is from 1.0 to 3.0 mol Zn^{++}/mol GH[, more preferred from 1.1 to 2.2 mol Zn^{++}/mol GH and most preferred from 1.2 to 2.0 mol Zn^{++}/mol GH].

13. (Amended) A process according to [any of the preceding claims] claim 1, wherein the growth hormone is [hGH] human growth hormone (hGH) or a [derivatives] derivative thereof.

15. (Amended) Cation crystals of human growth hormone (hGH) or a hGH [derivatives] derivative.

17. (Amended) Crystals according to claim 16, wherein the molar ratio between Zn^{++} and GH is from about 0.2 to about 10[, preferably from about 0.5 to 5 and more preferably from about 0.5 to 2.0].

18. (Amended) Pharmaceutical preparations, characterized in that they contain crystals according to [any of claims] claim 15 [to 17].